SMARA UPDATE

The Quarterly Newsletter of the Department of Conservation - Office of Mine Reclamation

DEPARTMENT OF CONSERVATION UNVEILS NEW SQL MINE DATABASE

OMR Unwraps New Database:

CALIFORNIA MINING STATISTICS FOR 2002

In the near future a statistical look at mining in California will be possible based upon the SMARA mine database maintained by the California Department of Conservation's Office of Mine Reclamation (OMR). The current database uses Paradox software, but is now being converted to SQL to provide better security, more user-friendly interfaces, and easier queries. It is anticipated that an annual status report on mining could be routinely produced with the new SQL database. In developing this new database, OMR worked hand-in-hand with the Department's Office of Technology Services to create a data environment capable of providing information not only to OMR, but to the mining industry and local planners as well.

The Department recognizes that such a database will only be as good as the information put into it. With the new system in place, the next big task is validating the historical information within it and any new information received by OMR from mine operators and Lead Agencies. The system was designed to identify and adjudicate data entries that do not appear to be either reasonable or correct. It is now under consideration to put the non-proprietary portion of the current year SMARA database on the OMR website at: www.conservation.ca.gov/omr/index.html. This would permit Lead Agencies and the mining industry to check for errors or inaccuracies and to assist OMR in cleaning up the database entries. This would also allow Lead Agencies, the mining industry, researchers, and all users (including the public at large) to have ready access to this valuable source of data on mining in the state. Your feedback is encouraged and would be most welcome. Please contact Dave Beeby at: 916-322-1232, or email me at: dbeeby@conservation.ca.gov.

Under SMARA individual mine operators are required to yearly submit their Mining Operation Annual Report (containing specific mine operation data) to OMR in July of the year following the reporting period. This article contains data from the 2002 Mining Operation Annual Report that were submitted to the state in July 2003. The mine data – under the direction and review of Carolyn Saputo – were entered into the SMARA mine Paradox database by Amy Yhnell, Bethany Perez, Roger Le-Hinds, and Heather Smith. I am grateful to all of them for this ef-

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Syar Industries, Inc.'s Lake Herman Quarry processing plant, located in southwestern Solano County. The southwestern edge of the aggregate pit is in the bottom right corner. The mined rock is the 140 million-year-old Coast Ranges Ophiolite and is suitable for both asphalt and concrete. This regionally-important quarry supplies construction aggregate to five counties, and has been mined since the early 1870s. The green belt in the center of photo is a golf course. To avoid controversy from encroaching urbanization, Syar built this golf course to act as a buffer between it's quarry and the neighboring housing development. This illustrates an example of successful planning. Planning ahead is a necessity for aggregate operators, Lead Agencies, and local communities in order to ensure a continued future supply of basic construction materials. *Photo by Don Dupras (2001).*

fort and their help, which is fundamental to this article. In May 2003, 1,481 inquiries were sent to the mines in the state, and all but 40 from the active mines have been completed and returned as of March 4, 2004.

Mine data in OMR have historically been recorded into the database exactly as entered by the mining operator, and at this point little attempt has been made to verify or modify those entries. Knowing which fields are blank, unknown, or need further work will assist in directing staff's effort as resources become available over the remainder of the year. Conversion to the new database software, which is taking place right now, will go a long way in assisting staff with the job of identifying errors and making corrections. Based upon the compilation of the 2002 data the following conclusions include:

NUMBER AND TYPE OF MINES:

There were 1,482 mines in the state in 2002. Of these,

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- 1,127 were active (with 230 showing zero production in 2002)
- 131 were closed with no intent to resume (with 9 showing some production in 2002)
- 145 were idle (with 4 showing some production in 2002)
- 55 were new mines (with 2 showing production in 2002)
- 9 were closed and certified complete by their lead agency (reclaimed)
- 14 were of unknown status (with 2 showing production in 2002)

Of the 1,127 active mines,

- 562 were open pits
- 271 were quarries
- 148 were gravel bar skimming
- 29 were tailings processing
- 21 were plants or mills
- 13 were dredges
- 11 were underground
- 6 were brine wells
- 3 were prospects
- 2 were evaporation systems
- 2 were hydraulic
- 59 were of unknown type

PERMITTED SIZES OF CALIFORNIA MINES:

There were 197,965 acres under permit to active mines in California at the end of 2002. The mean (average) size was 176 acres, and the largest was the Lake and Mineral Resource operation in San Bernardino County, owned by IMC Chemicals Inc. It had 21,776 acres under permit.

There were 70,855 acres disturbed by mining at the end of 2002. The mean (average) disturbance was 63 acres at the end of 2002. The largest disturbed acreage by an individual mine at the end of 2002 was 5,500 acres by Kaiser Ventures Inc.'s Eagle Mountain Mine in Riverside County.

WHO OPERATED THE ACTIVE MINES AND WHERE WERE THEY:

The 1,127 active mines were operated by 600 different commercial companies and 35 different governmental agencies.

Of the 1,127 active mines, 134 were operated by governmental agencies, and 993 were operated by commercial companies.

Of the 134 governmental agency mines, 92 were operated by counties, 14 by state agencies, 24 by cities, and 4 by various local districts.

There were active mines in 57 of the 58 California counties. San Francisco County was the only county without at least one active mine.

Most of the 1,127 active mines fell under the jurisdiction of a county as Lead Agency, but 81 fell within various city Lead Agency jurisdictions.

The counties of Inyo (69), San Bernardino (67), Riverside (54), Humboldt (49), Imperial (49), Kern (47), and San Luis Obispo (40) were the Lead Agencies that lead the state in the number of active mines within their jurisdictions.

The cities of Palmdale (8), San Diego (8), Redlands (8), and Irwindale (5) were the Lead Agency cities that lead the state in the number of active mines within their jurisdictions.

The number of active mines within each Lead Agency county or city was:

Lead Agency County (•) or City (o)	Number of Active Mines
• Alameda Co.	9
o Fremont	1
o Oakland	1
• Alpine Co.	4
• Amador Co.	17
• Butte Co.	15

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Lead Agency County (•) or City (o)	Number of Active Mines
o Oroville	1
• Calaveras Co.	5
• Colusa Co.	4
• Contra Costa Co.	8
• Del Norte Co.	16
• El Dorado Co.	10
• Fresno Co.	17
o City of Fresno	1
• Glenn Co.	13
• Humboldt Co.	49
• Imperial Co.	49
• Inyo Co.	69
• Kern Co.	47
o Bakersfield	3
• Kings Co.	1
• Lake Co.	2
• Lassen Co.	34
• Los Angeles Co.	9
o Azusa	3
o Compton	2
o Irwindale	5
o City of Los Angeles	2
o Palmdale	8
• Madera Co.	8
• Marin Co.	6
• Mariposa Co.	5
• Mendocino Co.	23
• Merced Co.	29
• Modoc Co.	17
• Mono Co.	7
• Monterey Co.	13
o Marina	1
• Napa Co.	4
• Nevada Co.	10
• Orange Co.	3
o Anaheim	1
o Lake Forest	2
• Placer Co.	8
o Rocklin	1
• Plumas Co.	19
• Riverside Co.	54
o Banning	1
o Corona	3
o Lake Elsinore	2
o City of Riverside	1
• Sacramento Co.	23
o City of Sacramento	1
• San Benito Co.	16
• San Bernardino Co.	67
o Apple Valley	1
o Barstow	1
o Highland	1
o Needles	2
o Redlands	8
o Rialto	2
o City of San Bernardino	1
o Upland	3
• San Diego Co.	25
o City of San Diego	8
o San Marcos	1
o Santee	1
• San Francisco Co. BCDC	0
• San Joaquin Co.	19
• San Luis Obispo Co.	37
o Atascadero	1
o Paso Robles	2
• San Mateo Co.	3
o Pacifica	1
• Santa Barbara Co.	15
o Lompoc	1
o City of Santa Barbara	1
o Santa Maria	1
• Santa Clara Co.	7
• Santa Cruz Co.	8
• Shasta Co.	26
o Redding	2
• Sierra Co.	10
• Siskiyou Co.	31
o Mt. Shasta	1
o Montague	1
• Solano Co.	7
• Sonoma Co.	21

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- Stanislaus Co. 15
- Sutter Co. 4
- Tehama Co. 31
- Trinity Co. 12
- Tulare Co. 23
- Tuolumne Co. 4
- Ventura Co. 18
- Yolo Co. 10
- Yuba Co. 16

COMMODITIES PRODUCED:

From the 1,127 active mines, 31 different commodities were produced in 2002, with the number of mines that produced each commodity indicated. (Numbers do not total because many mines produce multiple commodities.)

Commodity	Number of Active Mines
Sand and Gravel	501
Rock or Stone	122
Decomposed Granite	56
Clay	44
Limestone	36
Fill Dirt	32
Shale	26
Cinders	22
Decorative Rock	18
Silica	14
Pumice	10
Gold (Lode)	9
Gypsum	9
Borates	6
Dimension Stone	6
Gold (Placer)	6
Saline Compounds	5
Silver	5
Specialty Sand	5
Salt	4
Diatomite	3
Talc	3
Zeolites	3
Dolomite	2
Iron Ore	2
Feldspar	1
Gemstones	1
Lime	1
Olivine	1
Perlite	1
Rare Earth Elements	1

The total amount of industrial minerals produced in California in 2002 was 257,177,673 tons. The total amount of precious metals produced in California in 2002 was 300,905 troy ounces of gold, and 35,044 troy ounces of silver.

FINANCIAL ASSURANCES AND REGULATION:

Of the 1,127 active mines, the Financial Assurance (FA) status for them was:

- Fulfilled 943
- Not Fulfilled 184

Of the 184 active mines that have not fulfilled their Financial Assurance status:

- Needed an approved cost estimate 58
- Needed a copy of the FA mechanism 41
- Needed cost estimates and mechanisms 6
- Needed more money (FA too low) 37
- Needed various corrections 13
- Other 9
- Undetermined 20

Of the 1,127 active mines, the Financial Assurance (FA) mechanisms were (numbers do not total because some mines use two different mechanisms):

Financial Assurance Mechanism	Number of Active Mines
Surety Bond	544
Certificate of Deposit	343
Irrevocable Letter of Credit	177
Budget Set Aside	43
Pledge of Revenue	52
Trust Fund	36
Other	13
Undetermined	13

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The AB 3098 list includes all mines authorized to sell material to state or local government. In 2002, the list included 999 of the 1,127 active mines in the state. A total of 106 active mines were not on the list, 14 active mines were new, and 8 mines operated by the California Department of Water Resources were exempt.

Financial Assurances to guarantee reclamation of the 1,127 active mines totaled $159,471,950. This translated to a mean (average) of $141,501 per mine. A better indicator is the average Financial Assurance of $806 per acre under permit, and $2,251 per acre disturbed by the end of 2002. This figure was heavily skewed by a handful of large Financial Assurances, but it allows comparison with other western states or between different California Lead Agencies. It should be kept in mind that these average values have little specific meaning to individual mines in the state. At the mine-specific level, the range of Financial Assurances ranged from less than $1 per acre to more than $183,000 per acre. The highest single Financial Assurance in California at the end of 2002 was $16,649,526 which covers two mines in Ventura County. The lowest is $0. This article does not attempt to state whether these levels were appropriate and adequate to accomplish third-party reclamation.

The total of current Financial Assurances and the average current Financial Assurance (FA) per acre under permit for <u>all active mines</u> in each county is:

Lead Agency County (•) or City (o)	Current Total FA for All Mines	Total Acres Permitted	Current Average FA $/Acre
• Alameda Co.	$ 2,916,000	2,933	$ 994
o Fremont	$ 544,000	78	$ 6,974
o Oakland	$ 300,000	79	$ 3,797
• Alpine Co.	$ 29,000	118	$ 249
• Amador Co.	$ 737,000	3,496	$ 211
• Butte Co.	$ 460,000	2,173	$ 212
o Oroville	$ 6,000	27	$ 206
• Calaveras Co.	$ 118,000	2,333	$ 51
• Colusa Co.	$ 41,000	314	$ 132
• Contra Costa Co.	$ 1,645,000	2,066	$ 796
• Del Norte Co.	$ 147,000	301	$ 489
• El Dorado Co.	$ 1,382,000	119	$11,619
• Fresno Co.	$ 2,187,000	4,649	$ 470
o City of Fresno	$ 64,000	15	$ 4,267
• Glenn Co.	$ 203,000	1,363	$ 149
• Humboldt Co.	$ 436,000	1,440	$ 303
• Imperial Co.	$ 9,173,000	10,278	$ 892
• Inyo Co.	$ 6,769,000	12,876	$ 526
• Kern Co.	$11,548,000	19,078	$ 605
o Bakersfield	$ 22,000	171	$ 131
o Taft	$ 55,000	34	$ 1,631

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Lead Agency County (•) or City (o)	Current Total FA for All Mines	Total Acres Permitted	Current Average FA $/Acre
• Kings Co.	$ 111,000	8	$14,637
• Lake Co.	$ 519,000	764	$ 680
• Lassen Co.	$ 1,441,000	1,167	$ 1,234
• Los Angeles Co.	$ 1,080,000	438	$ 2,466
o Azusa	$ 1,116,000	48	$23,211
o Compton	$ 136,000	7	$19,429
o Irwindale	$ 5,083,830	1,194	$ 4,258
o City of Los Angeles	$ 1,972,000	280	$ 7,050
o Palmdale	$ 1,213,000	1,679	$ 722
• Madera Co.	$ 217,000	767	$ 282
• Marin Co.	$ 1,479,000	617	$ 2,396
• Mariposa Co.	$ 56,000	77	$ 725
• Mendocino Co.	$ 425,000	362	$ 1,173
• Merced Co.	$ 578,000	4,263	$ 136
• Modoc Co.	$ 307,000	657	$ 467
• Mono Co.	$ 375,000	437	$ 858
• Monterey Co.	$ 1,093,000	1,040	$ 1,051
o Marina	$ 130,000	402	$ 323
• Napa Co.	$ 589,000	872	$ 675
• Nevada Co.	$ 509,000	663	$ 768
• Orange Co.	$ 1,373,000	2,491	$ 551
o Anaheim	$ 86,000	259	$ 334
o Lake Forest	$ 504,000	91	$ 5,518
• Placer Co.	$ 424,000	693	$ 612
o Rocklin	$ 27,000	7	$ 3,857
• Plumas Co.	$ 327,000	313	$ 1,045
• Riverside Co.	$10,987,000	13,829	$ 795
o Banning	$ 15,000	154	$ 97
o Corona	$ 848,000	847	$ 1,002
o Lake Elsinore	$ 43,000	521	$ 83
o City of Riverside	$ 169,000	8	$21,160
• Sacramento Co.	$ 1,313,000	3,746	$ 350
o City of Sacramento	$ 25,000	251	$ 100
• San Benito Co.	$ 1,530,000	2,023	$ 756
• San Bernardino Co.	$18,945,000	39,364	$ 481
o Apple Valley	$ 13,000	390	$ 32
o Barstow	$ 91,000	242	$ 375
o Highland	$ 40,000	101	$ 396
o Needles	$ 15,000	994	$ 15

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Lead Agency County (•) or City (o)	Current Total FA for All Mines	Total Acres Permitted	Current Average FA $/Acre
o Rialto	$ 413,000	357	$ 1,159
o City of San Bernardino	$ 0	120	$ 0
o Upland	$ 276,000	54	$ 5,161
• San Diego Co.	$ 3,955,000	2,105	$ 1,879
o City of San Diego	$ 3,011,000	1,221	$ 2,466
o San Marcos	$ 200,000	544	$ 368
o Santee	$ 439,000	124	$ 3,540
• San Francisco Co. BCDC	$ 0	0	$ 0
• San Joaquin Co.	$ 2,649,000	4,218	$ 628
• San Luis Obispo Co.	$ 675,000	938	$ 720
o Atascadero	$ 12,000	5	$ 2,378
o Paso Robles	$ 6,000	22	$ 273
• San Mateo Co.	$ 410,000	144	$ 2,848
o Pacifica	$ 706,000	45	$15,693
• Santa Barbara Co.	$ 7,244,000	4,844	$ 1,496
o Lompoc	$ 15,000	99	$ 147
o City of Santa Barbara	$ 60,000	5	$12,046
o Santa Maria	$ 0	154	$ 0
• Santa Clara Co.	$ 1,446,000	424	$ 3.411
• Santa Cruz Co.	$ 8,127,000	1,621	$ 5,015
• Shasta Co.	$ 1,625,000	1,245	$ 1,305
o Redding	$ 68,000	700	$ 97
• Sierra Co.	$ 130,000	33	$ 3,948
• Siskiyou Co.	$ 340,000	706	$ 482
o Mt. Shasta	$ 21,000	97	$ 216
o Montague	$ 18,000	55	$ 325
• Solano Co.	$ 607,000	1,405	$ 432
• Sonoma Co.	$ 1,520,000	1,298	$ 1,171
• Stanislaus Co.	$ 176,000	1,643	$ 107
• Sutter Co.	$ 175,000	261	$ 669
• Tehama Co.	$ 197,000	1,775	$ 111
• Trinity Co.	$ 129,000	379	$ 340
• Tulare Co.	$ 285,000	1,016	$ 280
• Tuolumne Co.	$ 680,000	295	$ 2,304
• Ventura Co.	$ 22,787,000	5,280	$ 4,316
• Yolo Co.	$ 2,803,000	1,984	$ 1,413
• Yuba Co.	$ 3,296,000	16,072	$ 205

STATE TOTALS:

Combined Current Value of all FAs = $159,471,950
Combined Acreage Permitted for Mining = 197,965 Acres
Average FA $/Acre for All Permitted Acreage = $806/Acre

It should be made clear that comparing the reclamation costs of all type of mines for all types of commodities for all parts of the state is akin to comparing apples and oranges. However, the state's Lead Agencies can use this table to compare their own average reclamation Financial Assurance costs on a per-acre basis with that of other jurisdictions. Moreover, this particular analysis will allow OMR and the State Mining and Geology Board to prioritize which Lead Agencies may need closer scrutiny for their compliance with SMARA.

Disclaimer: Please keep in mind that the data entries used for analysis in this article came directly from the paper Mining Operation Annual Reports that were submitted by the mine operators. These are known to contain errors and omissions. It is also possible that data entry from the paper forms to the computer may have introduced inadvertent errors. It would be greatly appreciated, as well as assist us in keeping the cost of government down, if Lead Agencies as well as operators would bring errors in the mine data collected from Mining Operation Annual Reports to our attention. It is a certainty that the data quality needs improvement, but the anticipated corrections, while important, will likely only refine the conclusions reached in this report – not contradict them. However, until this data is corrected, be aware that the Department may not be able to support conclusions reached by analysis of this data.

To reiterate the need for your input and assistance: It is now under consideration to put the non-proprietary portion of the current year SMARA database on the OMR website at: www.conservation.ca.gov/omr/index.html. Such a database would contain information on the idle, closed, reclaimed, and new mines that were not included in this analysis. It would also permit Lead Agencies and the mining industry to check for errors or inaccuracies and to assist OMR in editing the database entries. It would also allow Lead Agencies, the mining industry, researchers, and all users, to have ready access to this valuable source of data on mining in the state. Your feedback is encouraged and would be most welcome. Please contact Dave Beeby at: (916) 322-1232, or email me at: dbeeby@conservation.ca.gov.

David Beeby
Supervising Geologist

Low Cost Alternative to 'Imprint Planting'

One of the most important decisions made when reclaiming a mine site is the choice of the replanting method. Plants can be grown in a nursery and planted from container stock or planted from seed. If planting is to be done by seed, the next choice becomes the method of applying the seed. The simplest method is broadcasting the seed by hand, however this leaves them vulnerable to loss via wind, water, birds, rodents and insects. Covering the seeds can be accomplished by mulching, such as with straw, which can be via a straw punch or hydroseeding, or by covering with soil. "Imprint planting" or "land imprinting" is a method that covers the seed with soil and leaves a depression imprinted on the soil that acts as a water catchment.

Imprint planting consists of pulling a roller with a seed box behind a tractor in order to plant seeds (Photos 1 and 2). Also known as land imprinting, this method has proven to be successful for revegetation. The roller leaves depressions in the soil due to the placement of an iron harrow that is perpendicular to the roller surface (Photo 2). This creates depressions in the soil as the roller is pulled over the land. The seeds drop into the depressions and are buried as the roller advances. Consequently,

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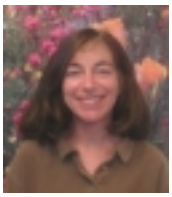

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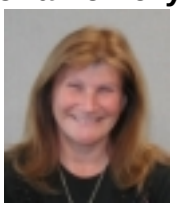

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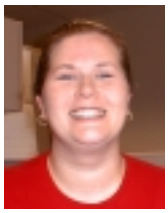

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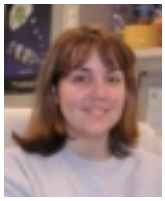

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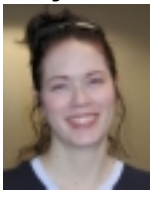

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Photo 1. Imprint planting with a tractor towing a roller with a seed box. Photos 1 and 2 were taken in January, 2003, are of the Lytle Creek aggregate mining area of southwestern San Bernardino County. *All photos are by the author*.

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the seeds are subject to much less loss than when simply broadcast over the ground. Buried seeds are less likely to be blown or washed off the site and less likely to be eaten by birds, rodents and insects. In addition, the depressions catch rain and direct it to the seeds, which is critical to successful revegetation in arid environments. Imprinting can be used on most soils with limitations being due to excessive clay content or cobbles. While it is a very effective method, cost can become prohibitive on large-scale applications. However, there is a three-step process that can be used in some situations as a low cost alternative.

A Low Cost Alternative

Under this alternative method, the site is decompacted as necessary and rough graded (not smooth) to finished elevations. Then a track-type tractor is run over the site to leave depressions punched in the soil. The imprints should be made perpendicular to the direction of water flow (slope). This method can be applied to slopes of 2:1. Seed is then broadcast by hand and a second pass is made with a drag that covers the seed and fills the depressions (Photo 3). This method is less efficient in getting seed into the soil than using an imprinter, but it is much more effective than broadcast seeding alone. Considerations for deciding whether to use imprinting or this alternative include the size of the area to be revegetated, the amount of time available to achieve successful revegetation, and cost limitations.

The primary advantage of the alternative method is that it is cheaper than land imprinting. This is due to the fact that the

Photo 2, Left. Close-up of the tractor-pulled roller with seed box. As the roller leaves depressions in the roughened soil, the seeds drop into the depressions, and are buried as the roller advances. There is an iron bar perpendicular to the roller on the lower right next to the roller.

Photo 3, Below. Men broadcasting native plant seed over an area that has been "tracked" and which will be "dragged" to cover the seed. Photo was taken on January 14, 2004, in the Banning Pass area of Riverside County.

equipment and operator are commonly available; they are usually present at sites undergoing reclamation concurrently with mining. This saves mobilization costs as well as time; commonly the work can be done during plant "down" time. The cost of labor to broadcast the seed is much less than the cost of an imprinter, tractor and operator. The disadvantages of this method are the decreased efficiency in placing the seeds in the soil and the lack of catchments for rain. Consequently, germination and plant growth may be lower than with imprinting; however, if sufficient time is available for reclamation success then this method can succeed with a considerable cost savings.

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Mining On Williamson Act Lands

Recently, the Department of Conservation has reviewed a number of proposed mines on agricultural land that have raised issues and concerns regarding Williamson Act compatibility with mining. Enrollment of land under a Williamson Act contract often restricts mineral extraction that would otherwise comply with SMARA. When mining is proposed on land enrolled in the Williamson Act, the landowner must address not only the reclamation standards of SMARA, but also the contractual conservation restrictions on the property.

Proposed mining on Williamson Act land involves a case-by-case analysis. The following is intended to provide a summary of the Williamson Act as it relates to mineral extraction and SMARA. The requirements contained in the Williamson Act are minimum standards that can be strengthened and supplemented by local government restrictions. However, they cannot be replaced or overridden by local government.

Nonrenewal

Mineral extraction is not an agricultural use, and is not compatible with the Williamson Act except under very limited circumstances. In most cases, the contract must be terminated prior to commencing a mining project.

Irrigated squash field in the Central Valley. Fertile soils are one of California's most valuable resources and are very important to the state's economy. As California's burgeoning population encroaches onto the rich alluvial valley floors, it is important to plan ahead in order to preserve our agricultural resources. The California Land Conservation Act, better known as the "Williamson Act," was passed by the California Legislature in 1965 to preserve agricultural and open space lands by discouraging their premature conversion to urban uses. *All photos are by the Department of Conservation's Division of Land Resource Protection.*

The preferred method for withdrawing land from a contract, according to the California Supreme Court, is nonrenewal. A landowner may serve notice of nonrenewal to the city or county at least 90 days before the annual renewal date of the contract, resulting in the land coming out of contract nine years after the renewal date. It is possible to phase in a mining project on adjacent, non-contracted land while the nonrenewal process runs its course.

Contract Cancellation

Under certain circumstances, a landowner may be able to more quickly withdraw all or a portion of the enrolled land from the Williamson Act through contract cancellation. This requires the local government to make specific findings, including that the cancellation is in the public interest, that the cancellation is consistent with the purposes of the Act, or both, depending upon the lan-

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guage of the contract. In addition, the landowner must pay a penalty of 12½% of the unrestricted value of the land to the State for removing the land from contract prior to the expiration of the nonrenewal period. The California Supreme Court has construed the cancellation provisions of the Williamson Act narrowly, emphasizing that cancellation should only be available in extraordinary situations and only when the Act's express prerequisites for contract cancellation are satisfied.

Contract Rescission

A third alternative is contract rescission. Under Government Code section 51256, a landowner may enter an agreement with the local government to rescind the contract on the land proposed for mining and simultaneously place other land in the same county, of equal or greater size and value, in a permanent agricultural conservation easement. This alternative is particularly useful if the mining company controls agricultural land in the same county as the project that can be put under a permanent easement. This process is subject to the review and approval of the Department and can be a lengthy process, though shorter than nonrenewal.

Compatible Use

There also seems to be significant interest in a fourth alternative – compatible use. However, the compatible use provisions as applied to mining projects on Williamson Act land are often the source of misapplication and confusion. While it is true that uses deemed compatible with the Williamson Act are permitted without resorting to either contract nonrenewal or cancellation, such uses must be consistent with all the statutory principles of compatibility.

A compatible use under Government Code section 51238.1(a), must not (1) significantly harm soil fertility, (2) significantly displace existing or potential agricultural operations or (3) induce nonagricultural development of surrounding enrolled lands. Uses that pass this test may be deemed compatible under the Williamson Act.

The alternative standards for non-prime land under Government Code section 51238.1(c) allow local governments to find compatible uses on non-prime lands that do not meet the criteria in subsection (a) if they: (1) require conditions for mitigation that would allow the project to meet the subsection (a) requirements; (2) have considered the productive capabilities of the land and the extent to which agricultural operations may be displaced; **and** (3) the use is consistent with the Act's purposes to preserve agricultural land or the use or conservation of natural resources on the parcel. The use of mineral resources shall comply with section 51238.2.

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Government Code section

Tomato field in Solano County. Since its passage in 1965, nearly 16 million acres of the state's 30 million acres of farm and ranch lands are currently protected under the Williamson Act.

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51238.2 gives local governments the discretion to approve mineral extraction on Williamson Act lands that cannot meet the three-prong compatibility test set forth above under two conditions. First, the board or council must find that the activity will not significantly impair the contractual commitment to preserve prime land or non-prime land for open space use. Second, the contracted land must be returned according to the SMARA reclamation standards for prime or non-prime land. For prime lands, this means that topsoil shall be salvaged and segregated by A, B, and C soil horizons and the land returned to a productive capability equivalent to or exceeding for two consecutive years, that of the premining condition (Title 14 California Code of Regulations section 3707). It is unlikely that long-term mining operations can meet part one of the section 51238.2 test by showing no significant impairment to the contractual commitment to preserve agricultural lands. Short-term operations of two to three years may be able to meet this condition.

Plant sites are not compatible uses. While they are associated with mining, they are not mineral extraction as that term is used in section 51238.2. Under SMARA, plant sites may be separately zoned as industrial sites, and thereby avoid reclamation requirements.

The SMARA performance standards for non-prime or "other agricultural land" require that in addition to topsoil salvage, maintenance and redistribution, non-prime agricultural lands shall be reclaimed so as to be capable of sustaining economically-viable production of crops commonly grown in the surrounding areas (Title 14 California Code of Regulations section 3708).

The Williamson Act requires that prime farmland be reclaimed to prime soil quality and other agricultural land be reclaimed to economically-viable productive capacity, and allows "no exception" to the SMARA performance standards. As an example, reclaiming contracted agricultural land to an open pit filled with water would not be compatible under section 51238.2.

The Department sometimes sees mining project applications that would reclaim contracted land to "open space" use. As noted above, the Williamson Act requires that contracted agricultural lands be reclaimed to their previous soil capabilities. These standards are contained in Title 14 California Code of Regulations section 3707 and 3708 for prime or nonprime land, respectively. Furthermore, "open space" is narrowly defined under section 51201(o) of the Williamson Act as: (1) a scenic highway corridor; (2) a wildlife habitat area for which the county has consulted with the Department of Fish and Game; (3) a salt pond; (4) a managed wetland area diked off from a water body; or (5) a tidal submerged area. The requirements for any of these

Grapevines. California's wines are among the world's best in quality, diversity, and flavor. The development of California's wine industry as well as its viticulture and enology — the study of grape growing and wine making — are globally recognized for their excellence.

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"open space" uses are very specific under statute.

Grandfather Provisions

The grandfather provisions of the Williamson Act (section 51238.3) provide an exemption to compatible use sections 51238.1 and 51238.2 in very limited circumstances. The use must have been in place prior to June 7, 1994, the application for such use submitted prior to June 7, 1994, or the use expressly specified within the four corners of the contract prior to June 7, 1994. Additionally, **the use must have been deemed compatible as the term was defined by this chapter at the time the use was initiated, the application submitted, the contract amended or at the time the contract was signed, whichever is later.**

These provisions are sometimes misapplied by landowners in an effort to obtain local government approval of mining on Williamson Act contracted land. The grandfather provisions do not apply where the use would not have been compatible prior to 1994, when the clarifying compatible use sections were added. Prior to 1994, state standards for determining compatible uses were largely implied from the basic purposes of the Act. The Williamson Act has always prohibited the use of enrolled land for purposes inconsistent with the preservation of the agricultural value of the land. Mining that impairs all or a portion of Williamson Act land contravenes the basic purpose of the Act and therefore, is not a use to which any of the grandfather provisions apply. Any use that results in the premature conversion of Williamson Act land and displaces existing farmland is not a use that would have been deemed compatible, as that term has been historically defined by the Act and the Department. Therefore, the grandfather compatibility provisions rarely if ever apply to mining activity.

The substantial tax benefits accorded to landowners through Williamson Act contracts are predicated on these important policy objectives. It would make little sense and raise constitutional issues to continue such benefits when virtually the entire basis for them – the agricultural productive capacity of the property – has been eliminated.

In considering mining operations on Williamson Act land, it is important to keep in mind the legislative intent of the Act: that preservation of a maximum amount of the limited supply of agricultural land is necessary; and that the preservation of lands in agricultural production constitutes an important physical, social, esthetic and economic benefit to the state. The Department of Conservation encourages landowners considering mining projects on Williamson Act land and local governments receiving such proposals to contact the Division of Land Resource Protection for discussions on this often-confusing issue. The Division can be reached at (916) 324-0850.

Stasia Baskerville
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Sunflowers

Irrigated Lettuce Field

Central Valley Cotton Field

California's varied soils correspond to the state's physiographic regions. For example, in the Central Valley, in other broad flat and gently sloping basins, and in major river valleys, alluvial soils develop on well-developed river deposits. Alluvial soils are generally deep and fertile, but lack the distinctive soil horizons that develop from long-term weathering conditions. The fertile soils of the Central Valley, Salinas Valley, and Imperial Valley are considered to be among California's most important resources. As a rule, alluvial soils are the most agriculturally productive soils in the state, although poor drainage or alkali conditions may be a drawback.

In contrast to the fertile alluvial valley soils, mountainous residual soils developed gradually over geologic time as the underlying bedrock weathers. The thinnest and most poorly developed soils in the state occur on the east face of the Sierra Nevada, and within the Transverse Ranges and Peninsular Ranges, where accelerated erosion on steep slopes washes away the soil.

For more information on Williamson Act, check out this website:

http://www.consrv.ca.gov/DLRP/lca/index.htm

Recycling demolition concrete rubble at the old Hamilton Air Force Base, near Novato, Marin County. During the past two decades the use of recycled demolition debris such as concrete rubble and slab asphalt pavement rubble has steadily increased throughout California. The most recycled materials in California by tonnage are asphalt and concrete. Most large aggregate plants in California process demolition debris into various aggregate products. Recycling programs that recover such demolition rubble as concrete, asphalt, and base aggregate significantly help reduce the waste-stream that goes into landfills thus extending their life span. By recycling these demolition items, operators avoid paying expensive "tipping fees" required at landfill sites. Another benefit of recycling demolition concrete and asphalt is that by reusing these basic building materials, the life span of existing quarries is also extended, thus preserving our natural resources.

Recycled asphalt pavement has been used in nearly 92% of the nation's roads and highways. The single most recycled product in California in terms of both percentage and tonnage is asphalt pavement. A 1999 Federal Highway Administration report shows that more than 80% of all asphalt pavement that is removed from roads each year in the United States is recycled. Recycled asphalt pavement (RAP) is routinely used in making new pavement, base, subbase, road shoulders, and embankments.

Conscientious community recycling programs throughout California annually reuse millions of tons of demolition asphalt and concrete. *Photo by Don Dupras.*

Questions or Comments?
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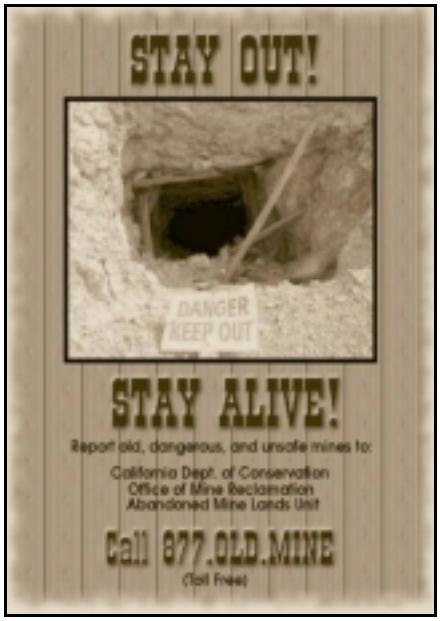

The ***SMARA Update*** is a quarterly publication of:

Department of Conservation's Office of Mine Reclamation
801 K Street, MS 09-06
Sacramento, CA 95814
(916) 323-9198

Our web site address is http://www.consrv.ca.gov/omr. The purpose of this publication is to impart the latest reclamation tips, as well as changes in SMARA-related legislation or interpretation of existing statutes by court decisions.

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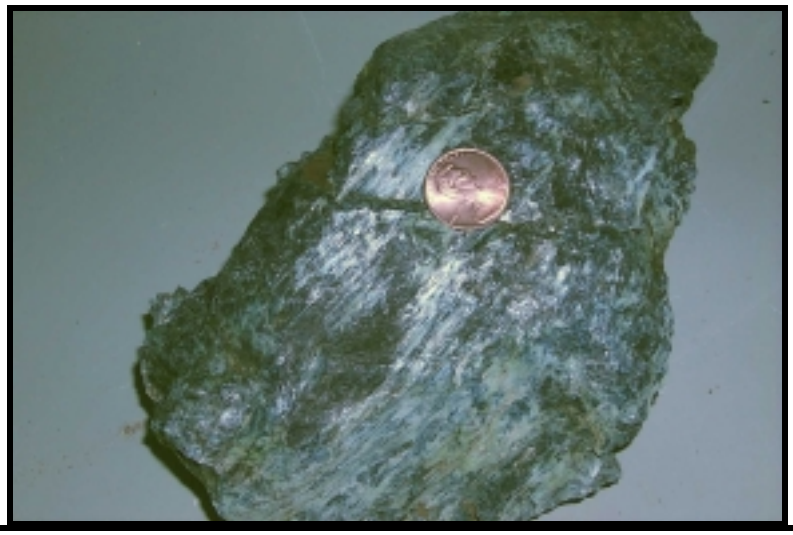

Serpentinite, a highly metamorphosed rock composed of the mineral serpentine, is a shiny, mottled, dark green-to-black color that looks rather like a snake's skin. It commonly weathers to a pale light-gray green. California serpentinite is common, often soft, and splits apart easily along irregular, slippery, foliation surfaces. It is California's official state rock. *Photo by Don Dupras.*